1:Beals E-5 (1940-1941)1946 NU34 Tarasco NU34

243 good crop, although complete failure is rare. A little wheat is grown in town lots, where it seems to do better than in fields.

[462] Wheat is harvested by hand with a sickle. Men do most of the work, but women and children help sometimes. The plants are cut as close to the ground as possible, tied in sheaves, and transported to the houses. One, and in [407] 1940 two, small threshing machine is used in Cherán, but the bulk of the wheat is threshed by hand with flails. The flail used is a slender pole about 8 feet long. To this are fastened two or three heavy iron wires some 10 to 12 feet long. Threshing is done on any hard clean-swept ground when the weather is dry. One stone threshing floor exists at the end of Zaragoza Street. The owner is usually given a liter or so of wheat for its use, although it is built on public property. The straw is carefully saved, whether threshing is done by hand or by machine. Both men and women winnow [462] the wheat on windy days (pl. 3, center). The grain is stored in sacks.

252 Some wheat is consumed locally. It is ground on the metate and made into bread or 439 atole. The bulk of the wheat is sold, however, to four mills at Purépero, Carapan, Tarataro, Jacona, or as far away as Morelia (since the highway has been built). Wheat is, indeed, probably the major cash export crop of Cherán. Prices and costs are discussed later.

MINOR CROPS

Barley.—Some barley is sown in June and harvested about October. Techniques of planting and harvesting are similar to those for wheat. Barley is fed to animals or sold outside the town. It is stored in sacks. Most barley is planted to restore failing cornlands, and the quantity is not important nor is it regarded as an intrinsically valuable crop.

Oats.—Although the growing of oats is reported, no farmer was found who had planted the grain. The quantity must be unimportant.

244 *Beans.*—The soil of Cherán is said not to be good for beans; possibly the climate is also unsatisfactory. Whatever the reason, Cherán grows few beans and many are imported from the Lake Pátzcuaro region.

The principal bean grown is a small pinkish type called *criolla*. White, orange-yellow,

1:Beals E-5 (1940-1941)1946 NU34 Tarasco NU34
Sierra Tarascans

244 brownish, and various spotted beans with much variation in size and shape were observed, and, in many cases, were named by informants. Until reports are received from botanists, the details of variation seem of little interest. All seem to be of climbing types.

Some people plant a few beans between the corn rows, usually in the garden. Mixing of corn and bean seed is said not to give good results. Separate planting of beans is rare, if it occurs at all. Beans are threshed by driving burros over the straw, or children may trample out small quantities.

Squashes and pumpkins.—A few pumpkins are grown in gardens for home use. The most common type is a squash known as chilacayote, although it is not grown abundantly.

The chilacayote must be planted 15 to 20 feet apart, for the plant spreads widely. Uusally it is planted in gardens. The fruit is large and green, resembling a watermelon in shape and color. The flesh is white and watery.

251 Some chilacayote is eaten fresh, cooked with
[252] brown sugar. Usually, though, it is cured by leaving it in the sun on roofs or wall tops for 2 or 3 weeks. Sometimes the squashes are coated with ashes mixed with water. This is believed to harden the exterior. After curing, they are stored in the "*troje*" or in the storage loft and saved until spring. Planting time is the traditional season for eating chilacayote, for this is a period when there are almost no fresh fruits or vegetables. The squashes sell
[435] for 25 to 50 centavos.

Broadbeans or habas.—Broadbeans (*Vicia*
244 *faba*), a coarse variety of European vetch, are usually planted in gardens or, more rarely, in the field. They are planted in furrows, like maize, and are cultivated similarly. Broadbeans yield well in Cherán but relatively few are grown, as they are not liked as well as ordinary beans.

Potatoes.—Planting of potatoes began in Cherán only 2 or 3 years ago. Apparently
[439] they do well but only a few are planted as yet, principally for sale in Mexican communities, for they have little place in Tarascan cookery. They are planted in April and harvested in November or December.

Chayote.—The chayote is not grown abundantly. Plants are found only in gardens,

244 usually near the house, where they spread over kitchen roofs, sheds, and fences. Planting is in the week of Candelaria. No fruit is borne until the second year.

The tubers formed on the roots of the chayote plant, called chinchayote, are dug up every third year on New Year's day or shortly after. They are found about a yard and a half from the stalk at a depth of 2 feet. They are boiled
[252] or fried and eaten. In flavor and texture they are superior to potatoes, which they resemble. If the tubers are not removed every 3 years, they rot and the plant sickens and does not bear.[9]

Miscellaneous vegetables and herbs.—Green vegetables and herbs are usually grown in small garden plots within the patio or houseyard. Most important is cabbage, of which two varieties are grown, one which heads and one which does not. The latter is the more common, producing a cluster of large leaves along a stalk a foot or more in height. Cabbage is an essential ingredient of the universal meat dish, čurípo.

On rare occasions, other vegetables are grown, such as carrots, tomatoes, and onions. The latter two do not produce well in Cherán,
[262] and carrots and other vegetables have little place in Tarascan cookery.

[263] Almost every garden has a few herbs, the most common of which is *silantro* (kulántro), used to flavor meat dishes. Two mints (kuaʔitiniš and kuaʔitiniš kamáta akúa) are grown for use in atoles.

[278] Camomiles, *manzanillo*, of at least two types are grown as carminatives.

Agave.—Although agaves (akámba) are
249 planted extensively along the ditches cut as field boundaries to keep out animals, relatively little use is made of them. There is some
[272] collection of the juice, *agua miel* (urápi). Some is consumed locally, but most of it is shipped to Uruapan. No native residents drink
[273] the juice after fermentation as *pulque*. Only wild agaves are roasted.

To secure the juice, according to description, a cavity is cut in the heart with a knife and the

[9] In Parícutin village, chayotes (apúpo) are planted in stone-lined pits to protect the seeds from gophers. The pit is about 80 cm. deep. The pulp is carefully removed from the seeds, which are then carefully wrapped in maize husks and tied with the same material.

1:Beals E-5 (1940-1941)1946 NU34 Tarasco NU34

Sierra Tarascans
La Cañada

245 262 *Manila* varieties are grown extensively for export. Scarcely a house lacks a sweet lemon tree. The fruit is sold in bulk to dealers before it is ripe. Bitter limes are sold the same way; the prices are less than for sweet limes, but people in Chilchota say they are more pleasant in flavor. Oranges are also grown extensively in orchards. Two varieties of guavas are utilized. The type known as *corriente* grows wild and is used only by poor people who cook the fruit in honey. The "fine" type is cultivated and sold. A few bananas are grown of the type known in Mexico City as *platano bolso* and in Uruapan as *corriente*. The local name is *Costarica*. A "fine" and an "ordinary" variety of peaches are grown; the entire crop is exported. Cherimoyas occur in most orchards, but not in such quantity as in the Tarascan towns of La Cañada. The product is all consumed locally. Some *zapote blanco* is cultivated in Chilchota; more is grown among the Tarascan towns. Cherries grow half-wild, being planted but not tended. The fruit is eaten raw or made into confections. A fruit known as juakinicuiles (in Mexico City, jinicuiles) is planted but not cultivated; it is much prized. Citron is grown in some orchards; all the product is sold. The tejocote is not used at all in Chilchota, and some people even were amazed at the idea it should be eaten.

Coffee is extensively cultivated, sharing with lemons the major place in the orchards. Almost all the coffee is sold in the bean in Zamora, and the coffee consumed locally is brought from Zamora.

244 262 Three varieties of squash are cultivated. Calabaza Tarasca is grown in the fields and is all consumed in the town, either boiled or roasted in hot ashes. Calabaza de Castilla is grown in two varieties, one with hard shell and one with soft. Both are exported. A variety called sopoma grows in the fields and is all used in the town, either to make sweets or as greens for broth or stew.

222 262 The principal wild plant used for food in Chilchota is a species of prickly pear (*tuna*), known as jococoxtle. It is used in certain of the beef stews or is ground with chile to make a sauce placed on the table.

253 443 262 Meat is mostly butchered on Saturday and Sunday, and the main sales take place on

439 located around the Sierra in areas favored by irrigation or rich soils, such as the upper escarpment in the South or the Zacapu Basin in the North. White field maize and yellow field maize comprise the bulk of the export crop. Ekuaru maize is entirely for home consumption and most of the mountain crop is used locally. Accurate statistics on crop production and export are not available for the Tarascan area; export data probably do not exist, since public records of sales are not kept in the villages.

Bean culture.—As an aboriginal cultigen the bean 244 (*frijol*, t'aʧán) is second only to maize in Tarascan agriculture and food habits. Twenty varieties of the kidney bean (*Phaseolus vulgaris*) are cultivated in modern Tarasca. Although most of these are found in many parts of central Mexico,[68] a few may be peculiar to the Sierra of Michoacán. Among the latter are small cream- or brown-colored beans called *petrons* or uaśári in some Sierra villages; another is called karáʂari. The Indians regard such beans as "criollos," or natives to the local countryside, while other varieties, which carry non-Tarascan names, are acknowl- [177] edged to have been introduced from the outside. Many wild beans are reported to exist in the Sierra, though only one, called uipínju (probably *P. vulgaris*) was described in Pamatácuaro, where it is tolerated along edges of maize fields. It is gathered and eaten, but is little liked.[69]

Besides the kidney bean, the Tarascans cultivate the large-seeded *Phaseolus coccineus* L. (*P. multifloris* Willd.), which they call kokóʧ (the ayocote or ayocotl of the Nahuatl-speaking people).[70] This bean is rarely grown or used by mestizos and even among the Indians its cultivation is dying out.[71] It is now grown only by the more conservative people, especially in the house-lot gardens where it is planted and tended by women. Kokóʧ, therefore, must be an old cultigen in the area. Having a sweet flavor, it is not as well liked as the newer kidney beans from the outside. In some of the Lake pueblos kokóʧ has

[68] The common central Mexican varieties are: Bayo Grande, Bayo Chico, Mexicano, Colorado, Color de Rosa (Rosa de Castilla), Ensarrado, Prieto, Blanco, Huiguerilla, etc.

[69] Unfortunately, a seed specimen of this bean was unobtainable. Another doubtful wild *Phaseolus* is reported from Corupo; called *frijol cimarrón*, it produces a white seed and an enlarged root stalk ("raíz como camote").

[70] The Spanish terms "*patol*" and "*frijole*" are also used in some localities. In Pamatácuaro *P. coccineus* is known as jepe.

[71] In many pueblos (Sierra and Lake regions) it was stated that kókoʧ was cultivated many years ago, but since the introduction of better flavored beans from mestizo towns, it was no longer grown.

244 special uses: e. g. because of its sweet flavor, it is eaten only with silacayote (*Cucurbita ficifolia*); in Ihuatzio it is ground with black maize to make pinole.

Lima beans (*P. lunatus*) may have been common formerly in Tarascan agriculture in the *tierra caliente*. In Acahuato, a former Tarascan pueblo (5 km. north of Apatzingán), a climbing brown-seeded lima called *comba* is still grown in the house-lot gardens. According to local informants, it was formerly an important bean in the Tepalcatepec Basin.[72] Moreover, the writer found a wild climbing lima in the hedge rows in the *tierra templada*, near Los Reyes.

Cultivation methods.—Except in some highly developed irrigation districts, most Mexican peasant farmers still use the ancient Indian method of planting beans with maize. In plowland Tarascans customarily alternate plantings of beans and corn along a given row (planted *intercalado*), whereas in hoe land beans and maize seeds are dropped in the same hole.[73] In either case the bean vine uses the maize stock as a climbing support, and imparts nitrogen to the soil. Beans are gathered in late fall or in early winter a few days before the maize harvest. When
[462] men are busy at other tasks, women and children gather the bean crop. Women sometimes plant beans with *elote* maize in the ekuáru; or often they plant beans alone, using poles for vine supports.

In many Tarascan pueblos bean production is declining; in some, farmers have ceased its cultivation. They claim that it is cheaper to buy *frijol* rather than to plant it, since the time and labor involved can be used more profitably at other tasks (e. g. lumbering). Others say that the soil lacks sufficient fertility to mature a bean crop. Again, in some sections of the Sierra beans are cultivated (with maize) only in newly cleared *desmontes*, where the ash from burned brush strengthens the soil sufficiently to raise one crop.

Use of frijol.—Beans are used exclusively for
[252] human food. They are boiled in *ollas* and served with salt. Tamales filled with beans are not uncommon. The special uses of kokóṗ have been mentioned above.

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[72] Hendricks (1945–46, vol. 1, pp. 40, 236) reports a bean called "comba" from the Balsas Basin, but identifies it as *P. coccineus*. The "comba" from Acahuato was identified as *P. lunatus* by Dr. E. W. Allard, College of Agriculture, University of California, Davis, Calif.

[73] In both cases the planter carried two bags (*morrales*), one containing maize seed, the other, beans.

244 **Squash culture.**—The cucurbits complete the ancient Mexican crop complex. Three species of the genus *Cucurbita* are today cultivated in the Tarascan area: *C. pepo* (*calabaza común* purú), *C. moschata* (*calabaza de Castilla*, purú), and *C. ficifolia* (*chilacayote* or *chilacayote*, t'ik'á¢a or tiká¢).[74] *C. pepo* appears to be the ancient squash of the area, for it is referred to as *calabaza común* or *calabaza corriente*, and in mestizo villages nearby as *calabaza tarasca*. Surprisingly few varieties occur, the most common being oblong (20 cm. long), ribbed (10), green and yellow mottled, with the ordinary five-sided peduncle. Smooth types are also cultivated. A small *pepo*, called čekámita, is grown in a few villages of the Sierra and La Cañada. In some pueblos the common name of *C. moschata* is *calabaza de la* [177] *Castilla*, which may indicate that this squash was introduced into the area after the Spanish Conquest; it is found mainly around the edges of the Sierra. Some varieties are flat and round, similar to the pumpkins of the northeastern part of the United States. Others are small, crooked-neck types.

In contrast to its minor place in the agriculture of many indigenous groups of Mexico, *C. ficifolia* is an important cultigen among the Tarascans. Two varieties are grown, both having the appearance of a watermelon: one with black seeds (*chilacayote común*, tiká¢), and the other with white seeds (*chilacayote-calabaza*, purútiká¢a). Of the two, the latter is said to have the better flavor.

Like *frijol*, squash is ordinarily planted with maize in both plow and hoe lands. Squash seeds are rarely planted in the same hill with maize and beans; rather the plantings are widely spaced (5 to 6 meters) along the rows or edges of the field in order to allow for spreading. *Chilacayote* (and often common squash) is usually planted in the fertile house lots or in the *desmontes*, where the soil has been fertilized by wood ash. Within the plowlands it is sometimes planted in a *quemazón*, a spot where a log is burned and ashes well mixed with underlying soil. Squashes are gathered in October or November before the maize harvest. [251] Chilacayotes are sun-cured on roofs or on adobe fences for 3 or 4 weeks, and are then stored in the house loft or in a corner of the dwelling.

[74] Botanical identification of the squash seed collected in the Tarascan area was kindly made by Dr. T. W. Whitaker, of the United States Department of Agriculture.

4: West K-5 (1946) 1948 NU34 Tarasco NU34
[P. 43a]

244 Tarascans plant few other minor native cultigens in the field. Camote or the sweetpotato (*Ipomoea batatas*) and jícama (*Pachyrrhizus erosus*) are planted in small amounts in La Cañada, but commercial production is found in the warm lands around Zamora, Lake Chapala, and the southern escarpment, outside the Tarascan area. Native vegetables such as chile and tomatoes are discussed under horticulture.

177 244 **Introduced New World crops.**—In Tarascan field agriculture these consist of two tubers: the South American potato (*Solanum tuberosum*) and, as mentioned earlier, an *Oxalis* (*papa de Castilla*).[81] Neither has much place in Tarascan food habits. The potato is now grown in some lowlands bordering the Sierra, e. g. in Comanja, where it is planted with maize. Its cultivation is slowly penetrating the Sierra, though most of the highland pueblos still reject it. Beals (1946, p. 26) states that Cherán residents began to grow potatoes around 1938.

243 177 **Old World crops in Tarascan field agriculture.**—Among the crops which the Spaniards introduced into Tarascan culture the small grains, wheat and barley, were the more significant in terms of both food value and degree of adaptation. Wheat was probably first sown in the Lake area by Spanish missionaries during the 1530's; the Spanish ranchers and *encomenderos*, however, for whom white bread was the main item of diet, were the principal carriers of wheat culture among the natives. By the mid-16th century Spanish wheat fields had been established in many parts of the northern plateau, and Tarascans of various pueblos in that area were cultivating the grain in special fields in order to meet tribute demands of the Crown and *encomenderos*.[82] Arabic irrigation [312] techniques appear to have been introduced jointly with wheat culture, for both early Spanish and Indian wheat fields in the northern Tarascan area were artificially watered.[83] The Relaciones Geo-

[81] The name "*papa de Castilla*" might indicate that the *Oxalis* species has been cultivated in Mexico for some time. According to local informants, however, it has been known in the area south and west of Lake Pátzcuaro for only 30 or 40 years. The tuber is often seen in the Pátzcuaro market. In Pichátaro it is boiled and eaten with piloncillo.

[82] The Suma de Visitas, ca. 1540 (Paso y Troncoso, 1905, vol. 1) mentions that wheat was cultivated in the following indigenous pueblos of Michoacán: Acámbaro, Chocándiro, Chiquimito, Chilchota, Guanaxo (Santa María Ario), Taymeo, Indaparapeo, Zacapu. Indians, however, were slow to adopt wheat foods. During the last quarter of the 16th century the Indians of La Cañada ate wheat only in times of maize famine (Mus. Nac. leg. 102, Real de Chilchota, 1579).

[83] Spaniards had introduced a Mediterranean grain adapted to winter rains and dry summers into a land of dry winters and wet summers. Con-

243 December. Being more tolerant of poor soils and frost than either maize or wheat, it is customarily grown on the upper slopes. As it is believed that barley improves the soil, it is frequently rotated with maize. Much barley is sown on the high slopes around Cumachuén and Pichátaro, where yellow-brown soils and a short-growing season prevail. Oats are rarely cultivated; small fields were reported only in Pichátaro and Cumachuén.

244 *Other European field crops.*—Broadbeans, lentils, and chickpeas are cultivated chiefly around Lake Pátzcuaro and in the northern plateau pueblos, where they are often grown with maize. [262] Although small quantities are raised in the Sierra, these crops have little place in the native diet.

HORTICULTURE

The house-lot gardens (ekuáɹueča).—These have been frequently mentioned above (pl. 7). In contrast to field agriculture, cultivation in the ekuáɹu is intensive; a large variety of plants (maize, beans, squash, vegetables, and fruits) are raised in each small lot; the soil is replenished by application of refuse from the dwelling and manure from the stable. The ekuáɹu is cultivated [462] mainly by the women and children of the household; the fields, in contrast, are worked by the men. In the gardens the women, always conservative, have retained the plants that are old in indigenous culture. Moreover, although some of the larger lots are plowed with oxen, most [412] are cultivated with two of the present forms of the tarákua: the wooden *pala* and the metal-bladed *azada*.

The principal garden crop is the *elote* maize, discussed above in connection with corn types. The cultivation of the old beans, such as kokóɨ, small patches of amaranth, and various squashes in the ekuáɹu, has also been mentioned. The women plant in the garden other indigenous vegetables, such as chayote (ipu; *Sechium edule*),[99] *tomate* (tóma; *Physalis angulata*), which bears the small green husk-enclosed tomatoes; and, if water is available for irrigation, chiles of various types. The most significant vegetable grown in [262] the Tarascan house gardens, however, is the

[99] The chayote bears annually small squashlike fruits, which are boiled and served with chile. In its third year the plant develops a large tuberous root, which is dug up and boiled (naráa) and is often ground on the metate to a flour, which is served as a gruel (ogró). The plant is reproduced by seed, or rather by planting the entire chayote fruit.

244 European cabbage (*col, repollo*), which the Indians
262 have thoroughly taken into their diet. Both the leaf and head varieties are cultivated. Almost every ekuáru in all Tarascan villages contains a small patch of cabbages, which are used for the famous čurípu, or meat and vegetable stew [94] (pl. 5). A more common stew (*repollo-šakuá*) is made of cabbage alone, flavored with red chile, onion, and silantro. The leaf cabbage is the
244 usual variety found in the Sierra. It is rarely planted by seed, but by replanting sprouts that occur at the base of the stalk. The plant is persistent, surviving the frosty Sierra winter; leaves are stripped off until the stock often reaches a meter in height. Other vegetables such as lettuce, radishes, carrots, peas, and turnips, although known in many parts of Tarasca since early colónial times, are today little cultivated or used in native cookery.

247 In addition to the food annuals, the ekuáru
249 contains various medicinal and ornamental plants, mainly those of the Solanaceae, Fabaceae, and Compositae. In a great number of the house lots women plant a stalk or two of tobacco (*Nicotiana rustica*, andúmukua), used not for smoking,
[276] [278] but as medicine.[95] The *trompeta* or *floripondío* (*Datura arborea*); *colorín* or p'ɔɹéŋ́ʌ (*Erythrina americana*); two euphorbias, *chupiri* (*E. calyculata*) and *flor de pascua* (*E. pulcherrima*); and the Old World *higuerilla* or castor bean (*Ricinus communis*) are not uncommon in the house gardens of the low country marginal to the Sierra. European Compositae, geraniums etc., make up most of the ornamental plants cultivated around the house.

Fruit culture in the ekuáru.—Practically every
245 house lot in most Tarascan villages contains a few fruit trees, both Old World and native. A definite climatic distribution of fruit types exists. In the Sierra are found only the cold-tolerant deciduous fruits such as the European peach, apple, pear, quince, and the native crab apple (*tejocote* or kaɹás) and cherry (*capulín* or šéngua). In the lowlands around the Sierra, however, both subtropical and cold-tolerant fruits are cultivated. The former include the Old World citrus (limes, oranges, lemons), figs, pomegranate (*granada de*

[94] Čurípu is eaten principally during the maize harvest period and on religious holidays.

[95] For example, in Pichátaro tobacco is taken for fever and is chewed to cure toothache.

262 raw (when aged or *pasado*) or, more recently, cooked on Easter, and sometimes on the village saint's day are distributed to all inhabitants at the end of the fiesta.[101] Moreover, cacao beans [439] were formerly an important trade article imported into the upland pueblos. In most households in 252 the Sierra the beans were roasted on the *comal* and then wet-ground on the metate. Mixed with piloncillo and cinnamon, the chocolate "dough" was made into small disks (2 in. diameter), called k'ékua. A chocolate drink is made by dissolving the k'ékua in hot water. A few storekeepers still make disks from ground chocolate purchased from mestizo wholesalers. Today chocolate is [609] taken principally on fiesta days, and is often served to visiting strangers. Other tropical fruits, such 262 as the common banana, mango, pineapple, mamey, chicozapote, zapote prieto, etc., are brought into the Sierra in season. They are eaten at all times and appear to have no ceremonial significance. Pineapple is used for a fermented beverage, *tepache*.

244 **Specialized truck gardening.**—This is a more recent type of horticulture among the Tarascans. 312 They have adopted intensive commercial production of vegetables in only a few well-watered spots near large mestizo markets. The most notable truck gardening district has developed on the narrow stretches of lacustrine soil along the shores of Lake Pátzcuaro, where irrigation is practiced. Although water is carried in buckets to some of the smaller gardens (e. g., in Puácuaro), most of the vegetable plots are irrigated with the t'apáratarákua, or *pala*, possibly a pre-Columbian invention.[102] This instrument consists of a wooden [406] spoonlike container fastened to a long pine pole, which, resting on a crosspiece, is used like a lever to scoop water from ditches or wells (fig. 4; pl. 7). Along the wide western shore of Pátzcuaro shallow ditch wells are dug down to the water level (5 to 6 ft. from the surface), from which water is scooped and distributed to vegetable plots by a system of small canals. Along the narrow shores of the Tarıu-k'éri Peninsula (where the water table is low) small canals have been constructed to permit lake water to flow into a ditch well, from which the water is lifted with the *pala* to high levels. In

[101] The latter custom was reported from Charapan and Paracho.

[102] The provenience of the *t'apáratarákua* is not clear. Its mention has not been encountered in colonial documents; the Relación de Michoacán (p. 25), however, speaks of irrigated maize, presumably around Lake Pátzcuaro. Today the *t'apáratarákua* is used also at Tarejero, in the basin of Zacapu.

244 addition to the gardens of Lake Pátzcuaro, 312 commercial truck farming is also carried on in La Cañada and in Atapan, but on a smaller scale. There, fields are irrigated by diverting water from streams, a technique probably learned from Europeans.[103]

244 The native chile, *jitomate* (tom-kuaraki), *tomate*, and green beans (*ejotes*) and the Old World onion, garlic, cabbage, and lettuce are the principal products of the commercial gardens. Chile is the most significant of these, in terms of both acreage and market value. The fruit of this plant, a vitamin-rich gastrin, has always been important in the aboriginal diet. Two species of *Capsicum* are cultivated: *C. annuum*, the common herbaceous annual, and *C. fructescens*, the perennial shrub (*chile de árbol*). The latter is cultivated mainly in the house gardens. Both species re- 244 quire a long growing season and abundant water; 438 consequently chile cultivation is absent from the Sierra, but is found in the surrounding well-watered areas. Chile, therefore, has ever been a [439] trade article between the Sierra and its borderlands.[104] Tarascan Puácuaro, Uricho, Arúcutin, and mestizo Tócuaro and Erongarícuaro are the main chile producers of the Lake. Most of the La Cañada pueblos raise some chile for export into the Sierra, but Etúcuaro, outside the valley, is the largest producer of that general district. All these areas raise *chile verde*, rather than the *chile seco* of the *tierra caliente* and Lake Cuitzeo district.[105] In both the Lake Pátzcuaro and La Cañada areas chile and tomatoes are first planted in the *almáciga*, or hotbed, in December.[106] Replanting in the gardens is done in March, and the vegetables are harvested from June through September.

STOCK RAISING AND ANIMAL PRODUCTS

231 Modern Tarascans raise most of the European animal domésticates. Most households own a team of oxen for plowing and one or two burros for hauling wood and carrying produce to market.

[Text continues top of P. 49a-Anal439]

[103] In several formerly Tarascan towns in the northern plateau area vegetables are cultivated on a commercial scale. The truck farming around Ziricícuaro, southeast of Lake Cuitzeo, was significant during the latter part of the 18th century. Tarascan horticulturists of this pueblo carried vegetable produce as far as the Toluca market (AGN Historia, vol. 73, f. 265).

[104] The Tarascan name for Chilchota is *tirápu*, which means green chile. The Sierra people have always thought of La Cañada as a producer of chile, as well as other vegetables and fruits.

[105] The chief varieties of *C. annuum* in the Lake district are *lumirillo* (*verde*), *amarillo*, and *relleno* (*bell chile*). *Chile seco* from the *tierra caliente* reaches the Sierra through the markets at Uruapan, Pátzcuaro, and Los Reyes.

[106] The *almáciga* is likely a European introduction, although it was pre-Columbian in the *chinampa* district in the Valley of Mexico.

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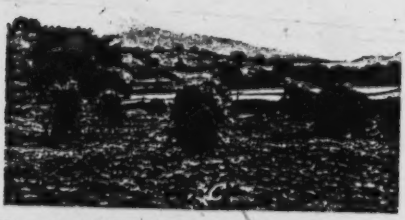
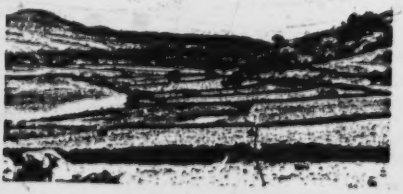
[342]





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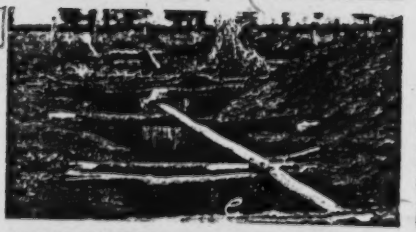

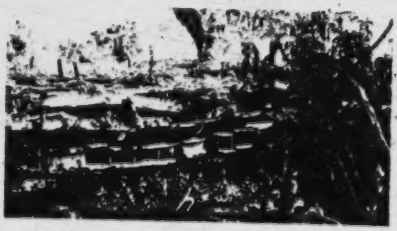

PLATE 7.—Horticulture and domestic animals. a, Large plowed ekuáro, San Felipe. Note animal pen adjoining fruit. b, Small patch of cabbage in house lot, San Felipe. c, Vines of chayote in ekuáro, Tzacapúlio, La Ciénega. d, Irrigated vegetable plot along west shore of Lake Pátzcuaro, near Ardeatio. e, Ditch well and *pozo* (t'apóntárakuecu) used to lift water from ditch to irrigate fields. Near Uricho. f, Sheep grazing in harvested maize field, near Tzintzo. g, Herding sheep near summit of Cerro de Patámbaro. The flock is from the rancho of Uringuitiro. h, Bee hives in house lot, Aranja.

[End-plate 7]